DOCUMENT RESUME

ED 080 912 CG 008 075

AUTHOR	Lighthall, Frederick F.
TITLE	Anxiety as Related to Thinking and Forgetting. What Research Says to the Teacher Series, Number 30.
INSTITUTION	National Education Association, Washington, D.C. Association of Classroom Teachers.
PUB DATE	May 64
NOTE	32p.
AVAILABLE FROM	National Education Association, 1201 Sixteenth Street, N. W. Washington, D. C. 20036 ($0.25, quantity discounts)
EDRS PRICE	MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS	*Anxiety; Arousal Patterns; Educational Experience; Fear; *Memory; *Psychological Patterns; Reactive Behavior; School Phobia; *Teacher Role; Thought Processes

ABSTRACT

The purpose of this pamphlet is to increase teachers' comprehension of anxiety and its relation to children's thinking and forgetting, to their problem solving ability and their sense of competence. The pamphlet describes four parts of the anxiety experience: 1) the anxiety cue, the particular thought, memory, or sensation which precipitates the anxiety affect; 2) the anxiety affect, emotion somewhat like that experienced in fear, which is unpleasant and demands relief; 3) the primary anxiety reaction, a defensive or withdrawing move by the anxious person; and 4) the adaptive anxiety reaction, a self-concept or considerable courage to face fear. The pamphlet also examines stages in danger judgment, ways of reacting to danger, and the function of purposeful forgetting which becomes habitual when the danger is unavoidable and beyond mastery. The booklet concludes by providing teachers with cues for identifying anxiety in the classroom, and with specific strategies for helping the student to cope with that anxiety. (Author/LAA)

FILMED FROM BEST AVAILABLE CO

ED 080912

WHAT RESEARCH SAYS TO THE TEACHER

30

CG

Anxiety as Related to Thinking and Forgetting

Frederick F. Lighthall

CG 008 075

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL BY MICROFICHE ONLY HAS BEEN GRANTED BY

NEA

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

Association of Classroom Teachers
of the National Education Association

The "What Research Says to the Teacher" Series

is published to provide classroom teachers and prospective teachers with concise, valid, and up-to-date summaries of educational research findings and their implications for teaching.

Each pamphlet in the series is designed to serve two prime functions: to suggest principles and practical procedures that may be applied directly by the classroom teacher and to provide a springboard for further study and use of research findings.

To serve the first purpose, authors of booklets in the series select from each field those research findings that promise to be of most help to the classroom teacher. However, research has not yet provided scientifically valid findings on many aspects of teaching. In such cases, the best that can be offered is expert opinion.

It is impossible, of course, to provide a complete summary of research in any field in 32 pages. To help teachers further explore research findings, selected references are listed at the end of each booklet in the series.

The series was initiated in 1953 by the Department of Classroom Teachers (now Association of Classroom Teachers) and the American Educational Research Association under the leadership of Frank W. Hubbard, in his capacities as director of the Research Division, secretary-treasurer of the AERA, and assistant executive secretary of the NEA. Beginning in 1966, the Department of Classroom Teachers assumed full responsibility for publication of the series, with the assistance of the NEA Publications Division. One measure of the success of the series is the use of approximately two million copies of the booklets by educators in the United States and throughout the world.

New titles and revisions of existing titles are published each year. See the outside back cover for a list of current booklets.

SIDNEY DORROS, *Series Editor*

Published by
NATIONAL EDUCATION ASSOCIATION
ASSOCIATION OF CLASSROOM TEACHERS

MARGARET STEVENSON
Executive Secretary

BETTY I. BUFORD
President 1969-70

Single copy, 25 cents. Quantity orders at the following discounts: 2-9 copies, 10 percent; 10 or more copies, 20 percent. All orders of $2 or less must be accompanied by funds in payment. The NEA will pay shipping charges on cash orders, but orders not accompanied by payment will be billed with shipping charges added. Address communications and make checks payable to the National Education Association, 1201 Sixteenth Street, N.W., Washington, D. C. 20036

Copyright © May 1964
National Education Association of the United States
First Edition May 1964
First Reprint 1968
Second Reprint Dec., 1969

Anxiety as Related to Thinking and Forgetting

CONTENTS

Explanation 2

The Anxiety Experience Analyzed 4

Mild Anxiety Experience 4

Severe Anxiety Experience 6

A Closer Look at Three Elements of Anxiety 9

Anxiety Affect 9

Primary Anxiety Reaction 10

Adaptive Anxiety Reaction 10

Uncovering the Anxiety Cue 11

The Nature and Importance of Danger 15

Two Stages in Danger Judgment 15

Ways of Reacting to Danger 15

Functions of Purposeful Forgetting 16

Fear and Anxiety Have Different Consequences 18

Anxiety Aroused by Related Situations 19

Implications for Education 20

What the Teacher Can Do 23

Effects of Anxiety on School Experience 25

Selected Research References 29

General References 30

EXPLANATION

The author of this pamphlet, Frederick F. Lighthall, is assistant professor of education, Department of Education, University of Chicago. He has drawn upon research materials that offered possibilities of being helpful to classroom teachers. It is not a complete summary of research on the subject of anxiety. The interpretations and recommendations are those of the author. He modified the original manuscript in a few instances to adjust to the suggestions of the following reviewers: Richard R. Foster, former assistant superintendent, Washington, D.C., Schools; J. Raymond Gerberich, executive officer, AERA; Frank W. Hubbard, NEA assistant executive secretary for Information Services; and Margaret Stevenson, executive secretary, NEA Department of Classroom Teachers. Technical editing in terms of NEA editorial style was completed by the NEA Division of Publications.

ANXIETY AS RELATED TO THINKING AND FORGETTING

THE TENDENCY to stop and think and the tendency to stop thinking both hold close relationships to the goals of education on the one hand and, on the other, to children's perceptions of danger and their experiences of anxiety. Neither danger nor anxiety is confined to the rare or the pathological. Quite the contrary; they intrude regularly into our own and our students' interests, work, and thoughts. Therefore our effectiveness as teachers is bound to be influenced by the extent of our sensitivity to, and comprehension of, danger and anxiety.

The fact that our own well-intentioned classroom actions can and do constitute for various children at various times a danger, and that some things we say and some things we do create in students of whom we would least expect it a fear and avoidance of our own subject matter is a difficult but necessary admission. This admission is the more difficult for us by virtue of the fact that, once having admitted the painful truth, we are not in the least sure of what to do about the facts which force it on us. It is in the nature of children, teaching, and anxiety that we shall remain a painful distance this side of certainty. The purpose of this pamphlet is not to provide easy answers where none exist. Its purpose is to increase teachers' comprehension of anxiety and of its relation to children's thinking and forgetting, to their problem solving and their sense of competence.

To understand anxiety, as psychologists view it, is not a simple task. The essential difficulty lies in the fact that anxiety operates only when something very crucial to the anxious person is *absent* from his conscious thoughts. To understand anxiety it is necessary to understand how something which was extremely important to an individual has come to be purposefully pushed by him from his conscious memory and so slyly pushed that he is completely unaware of the pushing. Without this understanding, behavior actually generated by anxiety is interpreted incorrectly as being in response to events in the immediate environment and judged to be "silly," "queer," "stupid," or "crazy."

Two kinds of research have given us a deeper understanding of anxiety. One is clinical research. Here, intensive study is made of people who come to clinics because they need help in solving problems and in understanding their own feelings. The other type of research is experimental—volunteer or paid subjects are recruited more or less randomly from the "normal" population. Here, the emphasis is not on intensive study of the individual nor on helping him to do anything better or to feel better. In experiments the focus is on how people respond, on the average, to different situations or kinds of stimulation. The stimulus treatments or situations are highly controlled and may have nothing to do with the subject's own life or experience. In general, results from both types of research add up to a consistent picture. In some instances, however, there are contradictions between the two. We shall dwell on the similarities, leaving the unresolved differences to the reader's future inquiry.

THE ANXIETY EXPERIENCE ANALYZED

Perhaps the best way to begin to learn about anxiety is to get a vivid impression of it as it is experienced. The reader is urged to read carefully the two narrative descriptions of anxiety experiences given in this section. In addition, it may be helpful to reread them when they are referred to later in the pamphlet. Both are autobiographical accounts.

Mild Anxiety Experience

The first experience was described by a successful graduate student conducting observations in classrooms as a part of training in educational psychology. (The proper names used are not real and serve only to distinguish early experiences from later ones.)

> I was going over [to the Abbott School] twice a week; the first couple of times I was going over it was interesting. I felt I was learning a lot . . . Then I found, after about two or three times, that I was finding it more and more difficult to go over there. . . .

I was tense during the time, . . . terribly self-conscious. . . . When I left I felt . . . you know . . . a great feeling of relief . . . Like often as you walk out of a party where you've been "trying to say the right thing" you get this feeling of relaxation.

And then I found that it was harder and harder to go there, that I woke up tired, that the previous evening it was hard for me to do any studying . . . I was tired getting up in the morning. . . . Sometimes you can wake up and you can just move from there, and other times it takes you a long time to get going. And this was a long time getting going. It wasn't that I was *feeling* sick but I felt that if I wanted to I could have felt sick—that if I were to let myself I could have gotten headaches or . . . you know . . . if I were sick, felt that one should really stay in bed.

. . . . . .

. . . And finally for two weeks I didn't go. . . . the first week I rationalized it and said well, hell, I got a lot of work to do, and so on. The second week I realized . . . well, sit down and figure this out because you can't really go if you feel this way.

This description of what we shall call the *anxiety experience* contains four parts. One is the *anxiety cue:* the particular thought, memory, or sensation which precipitates the second part, the *anxiety affect.* The anxiety affect is a surge of emotion, somewhat like that experienced in fear, which is unpleasant and demands relief. This affective response is a reaction to the cue and, whether mild or severe, sets off changes in the nervous system and viscera which have reverberations throughout the body. A third part of the anxiety experience—we shall call it the *primary anxiety reaction*—is a defensive or withdrawing move by the anxious person. The primary reaction may take many forms, at once or serially—physical escape from the immediate situation or diversionary activity, thoughts, or feelings. A fourth part is what might be called the *adaptive anxiety reaction.* It is very different from the other three parts—it occurs much less frequently and requires either a fundamentally confident self-concept or considerable courage to face fear. It probably also requires more abstract intelligence. The adaptive reaction consists essentially in the individual's posing the question, "Why am I feeling this way?" and in his seeking an answer by analyzing the conditions surrounding the onset and cessation of the anxiety affect.

For the graduate student, the anxiety affect appeared in the form of tenseness and self-consciousness. We may surmise from

the account given that the cue was something in the school; the affect appeared in school or at the thought of the classroom and disappeared, with relief, when he left school. The primary reaction appeared in the form of awareness of fatigue, slowness in "getting going" in the morning, and heightened awareness of bodily aches and pains. The adaptive reaction was his realization that something was wrong, and his pursuit, to which we will turn later, of what was behind the experience.

It is not expected that anything more than a brief acquaintance with these parts should have been gained thus far. Also it should be kept in mind that the anxiety experience itself is only one aspect of the whole tangled network of thoughts, dangers, and actions referred to generally as "anxiety." Each of the four parts of the anxiety experience needs further scrutiny.

Severe Anxiety Experience

Consider a second anxiety experience, far more severe and incapacitating than the first, as described by a writer and college professor. (See General Reference 3, pp. 299-309.) The experience described occurred shortly after his despondent wife had committed suicide.

> We had dropped in at a road-house, near the end of that seven-mile walk, for a glass of beer . . . I was facing the side wall. On it a huge map of Wisconsin in red and yellow. Through the center of the gaudy map, a passenger train was depicted as dashing head-on down a track . . . Head on. Right at me . . . To destroy me for my guilt, as myself the destroyer of my wife. The objective fact was still there—the map and the train—I recognized it as a familiar advertisement of the Northwestern Railroad . . . the picture, to the *eye* an old map on a tavern wall; to the *feel* a horrible alien monster.
>
> . . . I say to Brown, "I'm feeling awfully bad" . . . in a low controlled voice. I drink more beer . . . to get my eyes off the map. I take out a pencil from my vest . . . bite it, first on one end, then on the other, repeatedly . . . I take out an envelop . . . open and show Charlie a paragraph. It is from Henry Holt, apropos of an arrangement . . . for publishing my poems . . . I comment on Mr. Holt's objection to my use of *foreword* instead of *preface* . . . with that irrelevant interest in trifles . . . anything to hold myself together. I lay the envelop on the table and draw aimlessly two

pictures—one large, one small . . . they were two *locomotives*. We get up . . . pay at the counter by the door . . . I buy a *cigar* . . . light it in the doorway . . . just as a train is passing over beyond the meadows. And my eye, above the match, turns by an unconscious fascination once more to the map . . . I suffer the intensest seizure of terror yet. The feel of onrush is so fiercely authentic that my very reason spontaneously omits the rational explanation [i.e., that what is being experienced is an hallucination]. . . , and repeats to itself that the locomotive can't really be rushing at me because in the map-picture it never passes beyond the gate-beam . . . depicted at the left just in front of it on the cross-roads. And I keep looking to *make sure*. I say nothing to Charlie, and my external manner is merely agitation.

. . . . . .

. . . I say nothing . . . try to "walk it off" . . . within a hundred feet I throw the cigar away, saying it seems to make me worse . . . I recover a little. The train, however, continues to torment . . . The train passes and I feel relief . . . Some. . . . After a half-hour among the mounds, I say again, "I'm feeling awfully bad" . . . "I'll go out into the open by the bluff."

Traversing the four or five hundred feet from Charlie, . . . I stand looking out over the silent and vacant water, in the blue midday . . . I feel a sinking loneliness, an uneasy, a weird isolation. . . . diffuse premonitions of horror. "Charlie" . . . no answer. The minutes pass. "Charlie, Charlie" . . . louder . . . and no answer. I am alone . . . Oh, to be home . . . home. "Charlie." Then on the tracks from behind Eagle Heights and the woods across the lake comes a freight train, blowing its whistle. Down the same track. Less than an hour after the passenger-train. Instantaneously diffused premonitions become acute panic. The cabin of that locomotive *feels* right over my head as if about to engulf me. . . . The train *feels* as if it were about to rush over me. In reality it chugs on. I race back and forth on the embankment. I say to myself (and aloud): "It is half a mile across the lake—it can't touch you, half a mile across the lake." And I keep looking to *make sure*. . . .

. . . . . .

Meantime the freight chugs on . . . I rush back and forth on the bluffs: . . . "my God, won't that train go away!" I smash a wooden box to pieces, board by board, against my knee to occupy myself against panic: I watch the train . . . it seems so slow . . . if it will only get across the flats . . . out of hearing. . . . I am intermittently still shrieking, "Charlie, Charlie." I am all the while mad with the terror and despair of being so far from home and parents . . . Charlie emerges from the woods. His presence is psychic support. The panic subsides into mere diffused dread, a

relative relief. I say: "I seem to be in an awful nervous state. We must get back to town." We begin to walk hurriedly along the dirt road. . . .

This narrative seems at first to describe a single, accelerating experience of anxiety. On closer analysis, there appear to be three such experiences, each flowing into and adding strength to the next. The first experience begins with the professor's awareness of the map-picture of the train. It ends with his doodling of two locomotives. The lighting of the cigar and awareness of a train in the distance begin a second anxiety experience which leads to a third when thoughts of loneliness and of home are interrupted by the whistle of a freight train.

Each of these experiences of anxiety contains (a) an interrupting emotion of tenseness, agitation, panic, or outright terror which has been prompted by (b) a cue—an image, perception, or thought—and which has caused (c) a primary anxiety reaction directed toward an escape *from* the situation where the emotion was aroused *to* some place where diversion, calm, or relaxation is anticipated. The order in which the three elements appear is, of course, different: first, sensing of the cue, followed by affect and then defensive maneuvers.

The cue in each case appears to be a train, or reminder of a train. The affect is intense: "terror," "onrush," "torment," "sinking," "uneasy," "horror," "acute panic," "despair." Primary reactions include diverting his gaze from the map, repeated biting of the pencil, attending to the difference between *foreword* and *preface,* drawing pictures, thinking about home and parents, calling out for Charlie, running back and forth, smashing the box, and, finally, a hurried withdrawal toward home.

In contrast to the experience of the graduate student, the professor's experience was devoid of a fourth part—the adaptive reaction of looking back at the experience itself to understand it and seek a cause. Many years later this professor turned his attention to his anxiety experiences, and it was that later inquiry which produced the memory of the experience reported above. At the time of the experience just reported, the professor was unaware that his emotional tenseness had anything to do with any real experience with trains earlier in his life. That there was a real connection with the past will become clear presently.

A CLOSER LOOK AT THREE ELEMENTS OF ANXIETY

Before delving into the origins of the anxiety experience of the professor and the graduate student, it is necessary to look more sharply at the other three parts of the anxiety experience.

Anxiety Affect

The emotional surge which we have labeled *anxiety affect* does not occur in any single intensity. We have to look on the affect of the anxiety experience as a continuous quantity, one which ranges from very weak and nondisrupting to extremely intense and grossly disorganizing. An idea of the continuous nature of the intensity is conveyed by describing it as ranging from a heightened sense of alertness or wariness to uncertainty and apprehensiveness, to foreboding, to fearful panic, and finally to overwhelming terror.

Anxiety affect, like the fear arising from perceptible danger, involves an arousal of the entire organism. Changes in respiration, flow of blood, composition of blood, and other bodily functions result from, or are part of, this affect. It is important to note that anxiety affect is not merely heightened emotion. It is itself unpleasant; when intense, it is painful and fatiguing.

One of the components of the arousal of anxiety affect is an activation by the autonomic nervous system of the sweat glands of the palms of the hands and soles of the feet. Unlike sweat glands in other parts of the body, these are relatively unaffected by temperature and are especially influenced by affect arousal in pain, fear, fright, or anxiety. We notice the special sensitivity of the palmar sweat glands to our fear and anxiety when we make a particularly difficult phone call to a hostile parent or to a prospective employer: after hanging up we notice that the phone receiver is moist.

But whether we notice it or not, these glands, and many other parts of our body, are activated—even with very mild experiences of pain, fear, or anxiety. In fact, our bodily reactions are frequently more sensitive than we are in our conscious feelings and thoughts. Direct, electronic recordings of the activation of palmar sweat glands have shown autonomic nervous system re-

actions to stimuli associated with pain even when the threatening quality of the stimuli were not consciously recognized by the persons whose reactions were being recorded. This kind of emergency response which goes on outside of awareness provides a glimpse of the nature of anxiety.

Primary Anxiety Reaction

The primary anxiety reaction stands in relation to the cue and affect of anxiety as the instantaneous jerking of the hand from the hot stove relates to pain: it is automatic, defensive, and directly responsive to a feeling that one has somehow gone too far. Just as physical pain serves as a signal of danger to the body, so anxiety affect serves as a signal to the conscious self that something dangerous has appeared and must be dealt with. The primary anxiety reaction, like the protective jerk of the hand, is an answer to the organism's insistence that immediate relief be provided. Later, the danger may be reapproached from a different angle, with different resources, or with different speed, but *now* it must be avoided because it is too near and damaging.

Adaptive Anxiety Reaction

To discover the origin of an individual's anxiety experience, that is, its cue, requires knowledge of that individual's perceptions and reactions to pain and danger prior to the anxiety experience. To gain such knowledge is not easy; frequently the individual himself has forgotten many if not most of his childhood dangers, and some of the most terrifying experiences in an individual's life occur before he learns to speak. Memories of these very important prelanguage experiences are coded in images rather than in words and are therefore more difficult to identify. Furthermore, there is no guarantee that even after diligent search by both the anxious individual and an experienced professional a cue will be brought to light. At any rate, *if* an anxiety cue is uncovered, a necessary part of the search will have been the anxious individual's *adaptive anxiety reaction.*

As noted, the adaptive reaction requires both reminiscence and analysis, identifying memories which occur in connection

with the anxiety affect as coming from dangers experienced earlier in life. This is a special process and requires skills and concepts at present available in our society only to those who are able to witness the process in others or are helped by training to engage in it themselves. The process of uncovering forgotten events constitutes a central part of most psychotherapy, although it is by no means the only important part of therapy. For further information on therapeutic processes, the reader is referred to General References 2, 4, 8, and 9.

UNCOVERING THE ANXIETY CUE

In considering the cue lying behind the graduate student's anxiety affect, note the means whereby he "discovers" the cue.

> The second week I realized . . . well, sit down and figure this out because you can't really go if you feel this way. And then I got to thinking that the grades I was sitting in [at Abbott] were from the second grade through the . . . seventh . . . And that paralleling these years when I went to school in . . . [Bakertown] which was a lousy school, where I didn't have anything in common with the other kids . . . I hated the school, I hated the teachers, I cut class. . . . I didn't do well academically. Before then, the first, second, third grades I was doing real well; . . . and then I wasn't doing well. . . . I had no happy experiences while being *in* school. The things that come to mind are that I didn't do my homework . . . I was always poor in spelling . . . and always being chastised by the teachers 'cause I *should* do well. . . . you should do well and you're not doing well . . . so I wasn't . . . I was having trouble with the teacher. I was having trouble with the *kids*. Because I didn't like to fight, and of course this is the sort of situation where you find yourself . . . where everyone wants you to fight . . . And also I tend to be stubborn enough . . . which meant that I got up *their* anger but yet wouldn't fight that much . . . So school wasn't fun from either the kids' or the teachers' standpoint.
>
> The only thing that happened was that I got advanced a grade in a subject. I stayed in the fourth grade and went up to the fifth grade for social studies 'cause I was specially good in that. And I came to find this alienated me even more with the fourth graders; and the fifth graders didn't accept me. And I kind of felt between two worlds. And this was the time when I would cut class . . .

I'd cut *school*. I'd feel sick in the morning, and then suddenly-get-well-at-nine-oh-five kind of idea.

So anyway, the feeling I had was that what I was doing at [Abbott] was experiencing again going through the school at [Bakertown] . . . that the sort of kids there remind me of [Bakertown], the teacher's comments reminded me of teachers' comments . . . and it would set it off. . . .

After I had . . . thought through the parallels between [Abbott] and [Bakertown], I could go back to [Abbott] and sit in a class. And although it wasn't easy, it was possible where before it really wasn't possible. And not only could I sit in it and see things, but now I was able to draw parallels *in* class that I hadn't been able to before . . . and therefore able to understand the situation.

What conditions were necessary for the student to reawaken buried memories of his own school days? First, he had to notice and attend consciously to his anxiety affect. Second, he had to possess the knowledge (a) that feelings do not just arise spontaneously, but come from somewhere and are responsive to something; (b) that there was a connection between his own feelings while observing and his sluggishness and hints of illness in anticipation of going to Abbott (i.e., a connection between anxiety affect and primary anxiety reaction); and (c) that there was an important connection between, on the one hand, any childhood memories which might "spontaneously" occur while in or thinking about the classroom at Abbott and, on the other, his feelings about being in the Abbott classroom. A third condition for recovering memories about the cue was that the graduate student feel confident that thinking about such connections promised gains that outweighed the unpleasantness avoided by not thinking about them.

Of the three conditions, the last is by far the most difficult for most people to meet. Without the opportunity to make gradual attempts accompanied by help and to secure encouragement from another person, it is difficult indeed to scrutinize one's own anxiety affect and reactions. After all, when one looks into his own experience of anxiety he begins to face problems which have remained unsolved and whose unsolved condition is directly responsible for the anxiety experience. By definition, then, the anxious person who has courage enough to

explore the origins of his anxiety is exploring an unremoved weakness. He may not know it consciously, but a great part of him *does* in some sense "know," and his body tends to mobilize energy *as if he were in danger*. If he can secure assurance from some source that persistent reminiscing and inquiry can, in spite of feelings of danger, lead to understanding and possibly solution of his problem, he may be able to continue his self-scrutiny.

In the present example, the graduate student did not achieve solution but did attain an understanding of his feelings. His adaptive anxiety reaction uncovered the cue to his anxiety experience. The same classroom images, movements, tasks, sounds of recitation and question-answering experienced at Bakertown in company with painful feelings of weakness, cowardice, and self-consciousness, now reappeared at Abbott. And with the images came the feelings which originally accompanied them a decade before.

Turning now to the cue for the college professor's anxiety experience, consider the most important of several experiences of disorientation and danger faced in childhood. This narrative, like the previous one, is the result of reminiscences and inquiry carried out by the professor many years later. At the time of the following episode he was two and a half years old.

> From out of woods, a far whistle, a puff of far smoke . . . Yes, I promise not to get *too* near the rails . . . and the Stocky Man strolls over after me. He stands and lights a cigar, looking idly up the tracks. The train. Nearer. I can see it sway. The great, black, puffing head-part. The length of moving sheds behind it . . . louder and louder. I lean over to get the view more nearly head-on . . . The thing lengthens out, swaying this way and that. And it seems to surge up and down. A train? What *is* a train? . . . I realize with horror what a Train is. It is a gigantic Caterpillar . . . gigantic beyond anything I have ever seen . . . I am fascinated . . . while the Caterpillar roars and wriggles and arches along. The Stocky Man puffs his cigar, Tina is lolling by the blue rail, and calling idly, "Come back away from the tracks, Ellery," . . . then the jerking angles of the driving-rod and the long boiler-belly make it for one tumultuous instant a tremendous Grasshopper . . . till it towers and lowers and grins in one awful metamorphosis, more grotesque than the most bizarre dreams . . . As It roars over the bridge with the engineer . . . madly pulling the bellrope, while the clanging fills what just now remained of silence in the world . . .

the Thing now seems to have leaped upon me . . . To me at a little more than two years, the Black Circle flashes a fiercely shaking Face . . . with gaping Jaws, flanked by bulging jowls, to swallow me down, to eat me alive. . . . small hands clapped to eyes. My heart leaps to my throat. . . .

The locomotive sweeps by, and my physical paralysis ends in a sudden leap away. The steam discharges from under the piston-box into the child's anus, with hot pain through his kilt-skirt . . . I am shrieking. The cars keep passing me. . . . The last car has passed. A slight relief. I stare toward its retreating rear end. My side aches . . . that frightens me too . . . I have lived through all thus far; I can live till I reach mama and Mary, I say to myself. My mother sees me and signals with her red parasol. Relief . . .

. . . I am getting myself together and thinking matters over. What a fool I am, I think. A Highlander, in costume, stands with his bagpipe against the station wall, laughing. The people on the platform are staring. Rows of heads too from all the car-windows. The world is all eyes. I am the Great Fool. (See General Reference 3, pp. 10-14.)

A rereading of the professor's narrative of his three-fold anxiety experience will reveal several parallels between the childhood experience of danger and the anxiety experienced some twenty-six years later on a seven-mile walk to some Indian mounds. The locomotive theme itself, but also the cigar smoke, the longing for home and for parents, the severity of the affect aroused—all are duplicated in absentia, so to speak, more than a quarter century later.

What is perhaps most remarkable about the parallelism is the fact that while the professor was so obviously re-experiencing an overwhelming fright of his childhood, *he was absolutely unaware of that earlier experience.* He remained unaware of it until many additional years later, after extended self-inquiry.

How could something so important and so powerful continue to exert its influence and yet be forgotten? How could the graduate student's humiliating years in grade school maintain their emotive power and still escape memory so readily?

For the answer to both questions, it is necessary to consider purposeful forgetting, or *suppression.* Suppression is one of several kinds of response to danger.

THE NATURE AND IMPORTANCE OF DANGER

The term "danger" refers to a complicated *relationship* between a person and his environment. Danger is a psychological, not physical, concept: it arises from a subjective judgment. This judgment consists in a person's weighing of two sets of forces—the *demands he sees* in his present situation and the *resources he finds* in himself with which he can meet demands. Situational demands can take two forms: (a) the individual must understand the sudden and novel in terms of his prior experience, or (b) the individual must either master or escape from a force which clearly possesses the impending power of pain or humiliation.

Two Stages in Danger Judgment

The danger judgment appears to be made in two stages. In order to portray the judgment process which seems to go on, it is useful to describe it as if it were composed of questions and answers by the person making the judgment. The process is usually faster than language communication, however, and is frequently not even conscious. First, we "ask" ourselves, "Do I know what's happening, and most important, what is happening *to me*?" If our answer is no, we are in danger. If we do understand what is happening, we are not yet out of danger's reach. We ask a second question: "Has the situation I'm in the power and likelihood of harm to me?" If the answer is no, we are not in danger; if yes, then we are in danger.

Danger consists, then, in our appraisal of our relation to the situation we are in with regard to two types of outcomes: understanding *vs.* bewilderment, and safety *vs.* harm.

Ways of Reacting to Danger

There appear to be two basic modes of reacting to danger. One is to approach it with the aim of eventual comprehension and mastery. The other is to avoid it with the aim of immediate comfort. Most of us vacillate back and forth between these two problem-solving strategies. Some of us are more cautious; others,

more adventurous. Whatever our predispositions, they are rooted in our experience of success or failure in attempts to understand and master.

It sometimes happens that we are caught in a relatively brief situation in which events are unexpected and incomprehensible to us, or in which we think they promise harm. We usually try both modes of neutralizing danger—approach for understanding and mastery if we cannot escape, and escape if we cannot understand or master. If both attempts fail and our diagnosis of danger does not change, we experience a flood of frightful and desperate emotion properly called terror. Or, if the danger is recurrent rather than brief, and if we can neither master nor avoid its recurrence, we experience crescendos of apprehension in our forced contacts with it. These crescendos drop sharply after the situation has become safe once more.

What do we mean by inescapable and unmasterable danger? Quite simply, we mean helplessness. Both the professor and the graduate student experienced feelings of utter helplessness. The professor, at two and a half years of age, was too young and dependent on his mother's closeness to flee from the locomotive. But he was also too young to comprehend the churning, rumbling thing coming toward him. The graduate student was afraid of fighting in a group where fighting was frequent and important. Furthermore, he was placed in a school situation in social studies which caused estrangement between him and his peers. He was powerless to change or escape from this estrangement.

FUNCTIONS OF PURPOSEFUL FORGETTING

The accumulated evidence from clinical and experimental studies of forgetting is relevant at just this point. After the experience of helplessness has passed, there are two typical modes of dealing with the memory of it. These modes are exactly parallel to the two modes of dealing with danger. The *approach* tendency seeks to hold the memory in mind, to consider it, and to try to understand what happened, why it was unexpected, how it might have been prevented, and how it may be avoided or mastered in the future. The *avoidance* tendency consciously

resists attending to the memory. All of us at one time or another have said to ourselves, "Well, don't get yourself upset over *that* again! After all, it's over." Also, we frequently find it helpful, in putting something out of mind, to divert our attention to problems in the present—especially soluble problems.

To keep in mind a situation of danger and helplessness is undeniably useful. It increases opportunities for discovering ways to master or escape it on its next occurrence. But to keep a dangerous situation in mind is just as undeniably unpleasant and fatiguing. Thus, if we put a recent danger out of our mind, we feel some of the same kind of relief as when the danger itself subsided. To avoid memory of the danger provides a sense of relief. If the danger itself is recurrent—as grade school was for the graduate student—then it becomes all the more important to keep the time between dangers free of the feeling of danger. If the memories of the dangers were attended to, too much time, from the student's point of view, would be fused with the unpleasant emotions of danger. Indeed, in order to concentrate on other tasks it is often necessary to put such memories aside.

The process of purposefully forgetting becomes more and more habitual where the danger has been unavoidable and beyond mastery. A transformation gradually takes place, as with all habits. First, the tendency to stop thinking of the unpleasant danger becomes anticipatory. That is, at the slightest suggestion of a reminder of the danger, diversionary thoughts are attended to. Second, the anticipatory memory avoidance becomes so habitual that it no longer demands the slightest attention. That is, the process of memory avoiding itself becomes unconscious. In this respect suppression is like walking, driving an automobile, knitting, or any other activity with repetitive components: it becomes so fluent that we can attend to other things while doing it. When suppression becomes habitual to this extent it is referred to as *repression.*

It is clear that the important events early in the lives of the graduate student and the professor, as is typical in the development of anxiety, were forgotten systematically and purposefully, through the process whereby suppression became repression. The very efforts to avoid these memories became so practiced that the efforts, too, came to operate outside of consciousness.

FEAR AND ANXIETY HAVE DIFFERENT CONSEQUENCES

A distinction between fear and anxiety is now possible. Fear consists essentially in an apprehensive reaction to something perceived in the environment which has been linked with previously experienced pain, bewilderment, or humiliation. Fear is a reaction to a *recognized* sign of harm. The experience of anxiety is similar but contains an essential ingredient missing in fear—repression. The graduate student was not afraid of Abbott classrooms. Nor was the professor afraid of trains. The sign of harm which acts as the anxiety cue is no longer consciously recognized as being linked to a dangerous situation. Abundant evidence shows, however, that in anxiety an important kind of recognition takes place below awareness. It is this below-awareness sensing of the anxiety cue as being linked to danger that sets off the anxiety affect.

One of the tragic consequences of repression is that it deprives the person of the opportunity to bring his growing powers of understanding and mastery to bear on the danger. In fear, that opportunity is at least initially present. The feared object or situation can be talked about and openly considered, thus affording opportunity for reassessment of its demands or of personal resources in relation to its mastery. However, if it becomes increasingly clear to the person that he is helpless to deal with the feared situation, the tendency to practice suppression will strengthen.

As a two and a half year old, the professor understandably retreated from the memory of the bewildering experience with the locomotive. At that time and for some time afterward, it is reasonable to assume, he was helpless to do otherwise. But as his horizons expanded and his ability to comprehend and master his environment grew, the potential dangers of locomotives shifted. His predisposition to repress the early memories and to avoid locomotives prevented him from becoming aware of the shift. *Therefore, for him, the shift had not taken place.*

The task of helping the professor as, say, a seven or eight year old fully to comprehend such a shift would have required more than his accomplishing a remembering of the earlier ex-

perience. The means whereby a transformation of this kind may be brought about in an anxious person is one of the foremost concerns of psychotherapy. Space prevents discussion of such means (but see General References 2, 4, and 9) except to mention that they require special training and are probably not carried out effectively in a classroom setting. The classroom is a place for preventing, not removing, anxiety.

ANXIETY AROUSED BY RELATED SITUATIONS

Consider one final but extremely important characteristic of anxiety: the tendency for anxiety affect to be cued off in more and more different situations. We shall call this tendency *anxiety generalization.*

Anxiety generalization occurs when the anxious person begins to experience anxiety affect not merely in the presence of the original anxiety cue, but also at the occurrence of related situations. In one experimental study the effect was noticed when volunteers were given a shock after hearing the word *barn* in a list of words. Recordings of the activation of palmar sweat glands showed that even volunteers who were unaware of the connection between *barn* and the shock responded to *related* words with increased palmar sweat. For example, even after the shocks had stopped, the words *cow, pasture, horse,* and *plow* cued off anxiety affect when only the word *barn* had been followed by shock. Words in the list like *building, four, easy,* and *cloth* did not cue off the anxiety affect. The generalization also included the two words immediately preceding and following the word *barn.*

Generalization is facilitated when two similar but not identical situations produce helplessness. For example, one of the most frequent and unavoidable situations in which children experience both helplessness and associated humiliation is produced in a variety of school situations. It is the test. The test takes many forms and occurs in a wide variety of school contexts. Repeated feelings of helplessness in tests are undoubtedly handled by children in ways that lead to anxiety. That is, they attempt to avoid

tests and to avoid thinking about past tests. As a result the possibility of attending to the specific weaknesses shown by the test and to ways in which the weakness might be remedied is removed. Test anxiety undoubtedly generalizes to evaluation in general, and probably in many cases to situations where the most important fact to the child is that there is a person in authority who has the power to find out even if he doesn't use the power.

IMPLICATIONS FOR EDUCATION

What does the nature of anxiety imply for educational goals and practice? In the first place, it should be clear by now that anxiety is not simply the feeling of unpleasant emotion. Some of the most essential components of anxiety are closely tied up with educational goals. Specifically what does our understanding of the nature and development of anxiety imply for classroom perception and action?

The teacher who is able to perceive the student's sense of helplessness will be a force in the prevention of anxiety and in the facilitation of mastery. What are some of the signs of helpless feelings in students?

1. Hostility consistently expressed toward the subject matter: "Aw, do we have to do this lousy stuff?" The nature of the student's problem will not be clear, but that he has one and does not feel up to coping with it will be clear.
2. Consistent bewilderment or *blocking* in spite of several explanations: "I just don't get it. I can't get *any* of that stuff." In the upper grades and in high school, bewilderment will be shown more in the absence of participation, absence of attention, and absence of completed or attempted homework.
3. Ready promises followed by procrastination and "forgetting."
4. Dependency on the teacher and/or other students for answers to questions which the student himself could answer with but slight thought or independent search.

In the elementary grades this often takes the form of a pupil performing well in the supervised group but not being able to start or to continue work alone.

Such a list probably is meaningless, however, without some on-the-spot coaching in ways to recognize helplessness, avoidance, and denial as they are reflected in children's behavior. School psychologists who may be skilled in the observation of anxious signs in children might fulfill this coaching role. Psychiatrists in the local community are frequently willing to consult with teachers in seminars. Without actual observations, discussion of their meaning, and some testing of the conclusions arrived at by further observation, a list of signs like the one presented above can only give general direction.

Some of these signs may not indicate anxiety affect or anxiety reactions directly, but rather may reflect a discrepancy between the curriculum content and competing demands which appear more real to the student. Where the discrepancy exists, it creates a conflict which sometimes places too great a burden on the student's capacity to attend to classroom events—he is pulled in two important directions while sitting in the classroom. Here, too, if conflicting demands continue, the student is likely to develop a sense of helplessness and will tend to give attention to the more immediate, tangible, and persistent demands. Other demands, such as assignments or concepts whose significance has escaped him, are frequently pushed from memory. For students who resolve the conflict in this way, school and school-like demands and activities become an occasion for anxiety.

Competing demands come from two sources. One source is made up of other situations which impinge on the student: his home, his part-time job, his peer group. The other source of competing demands is from within: his feelings and his reactions to them. Enough has been written and is generally known about situations in students' lives which compete for their school-time attention that it is unnecessary to do more than mention them here. Less well understood is the second source of competition for the student's attention in school. A student's feelings, especially his sexual feelings and feelings of anger, may become directly connected to anxiety.

An anxiety cue is most easily understood when it is an external situation, like a locomotive or school. However, the anxiety cue is frequently much more complicated. An important characteristic of the *situational* cue of anxiety is that it frequently can be avoided. The professor could avoid trains, and the graduate student was able to leave school each day.

Suppose, however, that fear, pain, or humiliation is experienced in connection with recurrent *inner* feelings rather than in connection with some external situation. For example, feelings of frustration and anger are common in the ordinary course of life. If a child's expression of anger consistently evokes in a parent or teacher a reaction which frightens or humiliates him, that feeling, as well as the image of the parent or teacher, will tend to evoke fear, become a sign of danger, and develop into an anxiety cue. While the parent or teacher can be avoided, the feeling, coming from within, cannot.

Children with parents who think they love their children but who in fact find them detestable in important respects grow up in a fearful and anxiety-engendering situation. Because these children react to their parents' rejections with anger, the feelings of anger, too, come to take on fearful meaning. In later life such children may show up in school as passive, dependent, and unable to express or even to experience anger. The emotional energy still operates in such children, however, and is a drain on resources which could be brought to bear on school demands.

In a culture with Puritanical roots, such as ours, where even mild forms of sexual expression may be abruptly and severely punished without explanation, sexual arousal easily becomes connected to experiences of humiliation and becomes subject to repression.

If we add up the inner and outer demands which compete for an adolescent's attention in school, it is no wonder that he frequently feels caught and helpless. His culture and peer group require him to compete for friendship, leadership, money, and prestige. Success and failure in this competition are accompanied with ups and downs in frustration and anger. The adolescent's feelings about his own masculinity or femininity are intensified on one side by the competition to succeed as a boy or girl, and on the other by sexual energy.

The difficult part for teachers is that most of the turmoil which he *feels* is kept out of sight by the adolescent. Day-to-day classroom activities tend to obscure the unspoken dialogue adolescents carry on within themselves about the dance, the game, and the gang.

WHAT THE TEACHER CAN DO

One of the best strategies for the teacher who is aware of a discrepancy between curricular specifications and the life demands of the students is to reach out and re-establish contact with them and to capitalize on the contact. It takes two steps which go on continuously, each feeding the other. *First*, by stimulating group discussion or the writing of autobiographies and accounts of critical incidents in family life, growing up, moving to new neighborhoods, and the like, the teacher assesses the main directions of competing attention and specific school dissatisfactions of the students. *Second*, the teacher uses the situations of conflict and competition in constructing reading and writing activities and in selecting from the required curriculum those parts which would appeal to the motivations and issues of concern contained in the discussions and themes. For example, the conflicts which exist in current events, legal arguments and decisions, and political debates can serve as a productive channeling of the aggressive energy frequently appearing in the statements and writing of boys and girls at all age levels. When the elements common to both curricular objectives and the concerns and underlying motives of the student are found and used, the helplessness students feel when confronted with insistent demands in their own lives and the demands of a less meaningful school curriculum can be largely removed.

An essential part of helplessness is the control of the standard of quantity and quality of work by another person. As adults, we have control over the selection of standards under which we will work. If present or prospective employment standards are too demanding, we have control over our movement to another

situation. Children in school, however, have no such control unless the teacher makes provision for it. If the teacher does not make provision for a sliding scale of either quantity or quality, then a uniform standard of work is employed. Such a standard renders those who work below it helpless in important respects.

Many teachers try to solve this genuine dilemma by planning with the group the sequence and amount of work to be accomplished in the day, the week, or the unit. Group planning can be useful, but it still tends to impose a single standard. It is in the nature of anxiety that it depends on the individual person's conception of the demands made on him in relation to powers of understanding and of mastery he finds in himself. Thus frequently teachers are surprised to find some students who have shown up well on achievement and intelligence tests easily and frequently stymied in work assignments. Many teachers, unfortunately, although for understandable reasons, refuse to believe signs in the student's behavior and choose instead to attend rather singlemindedly to his measured ability. Such was the case with the graduate student's teachers—he "should" have done better, except that important facts show that he could not.

Any teaching strategy which enables the student to control his own pace in approaching school tasks will to that extent render unnecessary his recourse to defensive avoidance of the task. While it is usually (even in college) too much to ask a student completely to control his own learning, he gains an important sense of autonomous competence if he is given the opportunity to pace himself.

One good way to provide for differences in students' control over pace is to offer and emphasize principal assignments and then suggest an array of specific tasks which can either serve as additional credit or, in certain numbers or combinations, substitute for the main assignment entirely. This needs planning and may create some extra work in evaluation, but it can engender positive involvement with work and better quality. It allows some students who feel they have to strike off in individual paths and others who do not like to be *told* what to do to approach an educative task, to avoid something distasteful, and to develop a sense of selectivity and control over the forces acting on them.

The relation between the child's being tested and his experience of helplessness and development of anxiety has been alluded to. Probably all children have some fear of tests. Some of these children react to the fear by putting tests, the preparation for them, and their outcomes out of mind. These children experience anxiety whenever tests are announced, thought about, or administered.

Since tests by their very nature are made up and given by other people, the child can experience very little sense of control directly over their occurrence. If he is to develop a sense of hope and confidence that, in spite of his fear, will lead him to engage in learning activities without a hindering apprehension of failure, then his early experience with tests—with paper and pencil tests, with teacher questioning, with chalkboard work—must leave him with a realistic sense of accomplishment. To the writer's knowledge the impact of testing on children's self-esteem and tendencies to approach or avoid schoolwork in the first three years of schooling (as well, of course, as the years afterward) has been given virtually no attention by school systems. Our knowledge of anxiety and of tests reveals this to be a serious omission.

EFFECTS OF ANXIETY ON SCHOOL EXPERIENCE

We have been considering the effect of school experience on the development of anxiety or, more optimistically, on the development of the tendency to approach school tasks with the hope of understanding and mastery. Now let us turn briefly to the effects of anxiety on school experience.

Anxiety, self-concept, and the ability to engage in deliberate thinking are closely interrelated. The child in school constantly faces situations whose demands he must compare with his own resources. Whenever his assessment of situational demands leads him to conclude that they are greater than his resources, he faces what for him is a dangerous situation—one in which he feels the promise of humiliation is great enough to call for escape.

Most children in most classrooms grow steadily in their power to cope with classroom danger. In any event, the humiliation which comes from classroom failure is usually short-lived. Some children experience their failures more intensely than others, however. Also, some children come to school having experienced greater failure at home than others. Some teachers are more punitive, some classroom groups more humiliating, than others. Whatever the case, it seems safe to say that all children have experienced humiliation in failure severe enough to be wary of its possible recurrence.

For those children who are especially wary and sensitive to the danger in situations they face, the innocent classroom discussion question can be unpleasant and can come to cue off anxiety affect. For these children a vicious circle becomes established: the teacher puts a question, anxiety affect is cued off, the child worries about the other children's and the teacher's reactions to possible failure, these worry-thoughts take the place of thought about the question and its answer, the first plausible answer that is hit upon is seized as a way out of the worry and danger, and this first answer is expressed. Frequently the answer has only limited relevance to the question, because the child has hurriedly interpreted it. When the question has been interpreted correctly, the answer is frequently of less than the expected quality, even for the child concerned. As a result the child becomes aware of his relatively poor performance, and his apprehensions about questions and his ability to answer them are "proven" to be realistic.

If one of the purposes of schooling is to help children carefully to consider questions and answers in search of the best of several possible interpretations and answers, then children's anxiety or predisposition to worry about failure when faced with questions is a hindrance. Experimental evidence has shown that threats to self-esteem, such as censure or invidious comparisons, increase the tendency to arrive at quick conclusions. Evidence also shows that persons whose self-image—the one they carry around with them, so to speak—is low also tend to arrive at premature judgments. When a person with chronic low self-esteem is placed in a threatening situation, his judgments are most impulsive of all.

The teacher who wants to build up the habit of deliberation should realize that for children who feel questions they cannot answer are dangerous, deliberation merely prolongs their contact with the unanswered question and increases anxiety affect. The advice, "Now wait! Stop and think about it for a second," is not enough. The student has to feel that this kind of pause will not be interpreted by the teacher or his peers as stupidity. The teacher who has set his students at ease on this point will have helped the anxious child as well as those with sturdier self-concepts. To create an atmosphere in which exploratory, tentative thought can be engaged in comfortably is difficult. It is impossible to do so if the teacher feels he has to "cover the material" first and worry about the atmosphere afterward. Covering material creates its own atmosphere—and it is neither tentative nor deliberate!

A teacher who is comfortable in saying, "I don't know. How would we find out?" when he is faced with a student's question he cannot answer is a teacher who tells the students by his actions that it is all right not to know *and* that it is possible, and all right, not even to know the way to find the answer. The teacher who poses questions with the intention of eliciting thought about, rather than answers to, the questions is providing students with an image of what it is like to deliberate. He is giving instruction in deliberation, not by talking about it, but by engaging in it.

Finally, the teacher who examines *out loud* the questions which he puts to students is providing a model for interpreting questions which will help the anxious and the impulsive student. If he encourages the students to examine his questions as a part of their answers, he will be going even further in helping the student learn to think.

The influences which anxiety affect and primary anxiety reactions exert on schoolwork generally are difficult to assess. Evidence from clinical study points clearly and consistently to the disruptive and distracting power of anxiety affect over most kinds of thinking.

Experimental evidence is less consistent; there is apparent evidence that anxiety can either inhibit or facilitate intellectual performance. The close connection between repression and

anxiety seems, however, to have been overlooked in many objective studies of anxiety. As a result, it appears that many of the studies claiming to investigate anxiety are really studies of fear. Depending on one's responses to fear—either approach or avoidance—it could exert an inhibiting or a facilitating effect on learning and performance. It is the writer's belief, based on the most careful clinical and experimental evidence available, that anxiety exerts only an inhibiting effect on problem-solving effectiveness. In contrast, fear—at least fear as studied experimentally, with experimental measures of intellectual performance—can exert a positive influence. This is attributable to the fact that in fear the nature of the danger is preserved in consciousness.

Teaching strategies based on threat of punishment (for example, poor grades, change of curriculum or teacher, and expulsion) undoubtedly accomplish the intended effect on children of creating fear. This has potential for causing growth or retardation *depending on the reaction to fear* elicited by the strategy. If the reaction is a sharpened attention to specific weaknesses and increased efforts for improvement and mastery, then no one could oppose the strategy. Far more likely in such a strategy, however, is the withdrawal reaction which is the first step toward repression and anxiety. Therefore, whenever it appears necessary or desirable to use some threat or "warning" to induce involvement, the teacher should take careful note of the child's reactions. If the threat fails to have its intended effect, it probably has backfired and contributed to the child's tendency to avoid and forget rather than to approach and remember.

At the present state of our ignorance the most effective strategies of eliciting involvement of children in curricular activities will seek to ensure gradual success in mastery with the development of hope as a goal rather than to emphasize humiliation in failure with fear as a goal. Success from a small step forward cannot backfire; failure can induce withdrawal tendencies at any point. In mixing the two it probably is best to consider the former as meat and the latter as salt.

SELECTED RESEARCH REFERENCES

1. Basowitz, H.; Rersky, H.; Rorchin, S. J.; and Grinker, R. R. *Anxiety and Stress*. New York: McGraw-Hill Book Co., 1955. 320 pp.
2. Coleman, J. S. *The Adolescent Society*. Glencoe, Ill.: Free Press, 1961. Chapters 8 and 10; pp. 220-43, 279-310.
3. Dittee, J. E. "Effect of Changes in Self-Esteem upon Impulsiveness and Deliberation in Making Judgments." *Journal of Abnormal and Social Psychology* 58: 348-56; November 1959.
4. Levy, David M. "On Evaluating the 'Specific Event' as a Source of Anxiety." *Anxiety*. (Edited by P. H. Hoch and J. Zubin.) New York: Grune & Stratton, 1950. Chapter 8.
5. London, P., and Rosenhan, D. "Personality Dynamics." *Annual Review of Psychology*. (Edited by P. R. Farnsworth, Olga McNemar, and Quinn McNemar.) Palo Alto, Calif.: Annual Reviews, 1954. Vol. 15, pp. 475-82.
6. Miller, J. G. *Unconsciousness*. New York: John Wiley & Sons, 1942. 329 pp.
7. Miller, N. E. "Studies of Fear as an Acquirable Drive: I. Fear as Motivation and Fear-Reduction as Reinforcement in the Learning of New Responses." *Journal of Experimental Psychology* 38: 89-101; January 1948.
8. Rickles, N. K. *Management of Anxiety for the General Practitioner*. Springfield, Ill.: Charles C. Thomas, Publisher, 1963. 108 pp.
9. Ruebush, B. K. "Anxiety." *Child Psychology*. Sixty-Second Yearbook, Part I, National Society for the Study of Education. (Edited by H. W. Stevenson, J. Kagan, and C. Spiker.) Chicago: University of Chicago Press, 1963. Chapter 11, pp. 460-516.
10. Sarason, S. B.; Davidson, K. S.; Lighthall, F. F.; Waite, R. R.; and Ruebush, B. K. *Anxiety in Elementary School Children*. New York: John Wiley & Sons, 1960. 351 pp.
11. Sears, R. R. "Experimental Analysis of Psychoanalytic Phenomena." *Personality and the Behavior Disorders*. Volume I. (Edited by J. McV. Hunt.) New York: Ronald Press Co., 1944. Chapter 9.
12. White, R. W., *The Abnormal Personality*. New York: Ronald Press Co., 1956. 644 pp.

GENERAL REFERENCES

1. Brenner, C. *An Elementary Textbook of Psychoanalysis*. Garden City, N.Y.: Doubleday & Co., 1955. 224 pp.
2. Dollard, J., and Miller, N. E. *Personality and Psychotherapy*. New York: McGraw-Hill Book Co., 1950. 488 pp.
3. Leonard, W. E. *The Locomotive-God*. New York: Century Co., 1927. 434 pp.
4. Masserman, J. H. *Principles of Dynamic Psychiatry*. Philadelphia: W. B. Saunders Co., 1961. 332 pp.
5. May, R. *The Meaning of Anxiety*. New York: Ronald Press Co., 1950. 376 pp.
6. Monroe, Ruth L. *Schools of Psychoanalytic Thought*. New York: Henry Holt and Co., 1955. 670 pp.
7. Ojemann, R. H. *Personality Adjustment of Individual Children*. Washington, D.C.: National Education Association, 1962. 32 pp.
8. Reik, T. *Listening with the Third Ear*. New York: Grove Press, 1948. 514 pp.
9. Wolberg, L. R. *The Technique of Psychotherapy*. New York: Grune & Stratton, 1954. 869 pp.

FILMED FROM BEST AVAILABLE CO

WHAT RESEARCH SAYS SERIES

1. Teaching Reading (Arthur I. Gates)
2. Teaching Arithmetic (Herbert F. Spitzer)
3. Teaching Spelling (Ernest Horn)
4. Teaching Handwriting (Dan W. Andersen)
5. Personality Adjustment of Individual Children (Ralph H. Ojemann)
6. The Learning Process (William Clark Trow)
7. Evaluating and Reporting Pupil Progress (John W. M. Rothney)
8. Guided Study and Homework (Ruth Strang)
9. Teaching Secondary School Mathematics (Kenneth B. Henderson)
10. Teaching High-School Science (J. Darrell Barnard)
11. Reading in the High School (Leo C. Fay)
12. Science in the Elementary Schools (Gerald S. Craig)
13. Class Organization for Instruction (J. Wayne Wrightstone)
14. Educational Media (Gerald M. Torkelson)
15. Juvenile Delinquency (William C. Kvaraceus)
16. Parent-Teacher Relationships (Irving W. Stout and Grace Langdon)
17. The Gifted Child in the Elementary School (James J. Gallagher)
18. Teaching Composition (Alvina T. Burrows)
19. Group Processes in Elementary and Secondary Schools (Louis M. Smith)
20. Teaching the Social Studies (Jonathon C. McLendon and Findlay C. Penix)
21. Understanding Intergroup Relations (Jean D. Grambs)
22. Nursery School and Kindergarten (Sarah Hammond Leeper)
23. Art Education in the Elementary School (Hilda P. Lewis)
24. Mental Health (Robert F. Peck and James V. Mitchell, Jr.)
25. The Educable Mentally Retarded Child in the Elementary School (Herbert Goldstein)
26. Physical Fitness (Paul Hunsicker)
27. Physical Education in the Elementary Schools (Anna S. Espenschade)
28. Creativity (E. Paul Torrance)
29. Listening (Stanford E. Taylor)
30. Anxiety as Related to Thinking and Forgetting (Frederick F. Lighthall)
31. Improving Classroom Testing (Max D. Engelhart)
32. Controlling Classroom Misbehavior (William J. Gnagey)
33. Teaching the Disadvantaged (Gertrude Noar)
34. Motivation in Teaching and Learning (Don E. Hamachek)